The Ulster Medical Journal, Volume 66, No. 1, pp. 43-53, May 1997.

Health and Education – the Metabolism of a Teaching Hospital

Welcome to the third year clinical students

Annual Oration at the opening of the 1996-1997 teaching session,

Royal Victoria Hospital, Belfast, 3rd October 1996

David R Hadden

It is my pleasure to welcome you formally as clinical medical students at the Royal Victoria Hospital. All of you already will have been here long enough to realise that the successful metabolism of this hospital depends in large part on the integrative action of the main corridor. As you walk down the corridor you will meet your friends, and recognise all the different members of the hospital staff as they go about their business. At the near end of the corridor is the Good Samaritan window, which was given to the old Belfast Royal Hospital in 1888 by Sir William Whitla (Fig. 1).

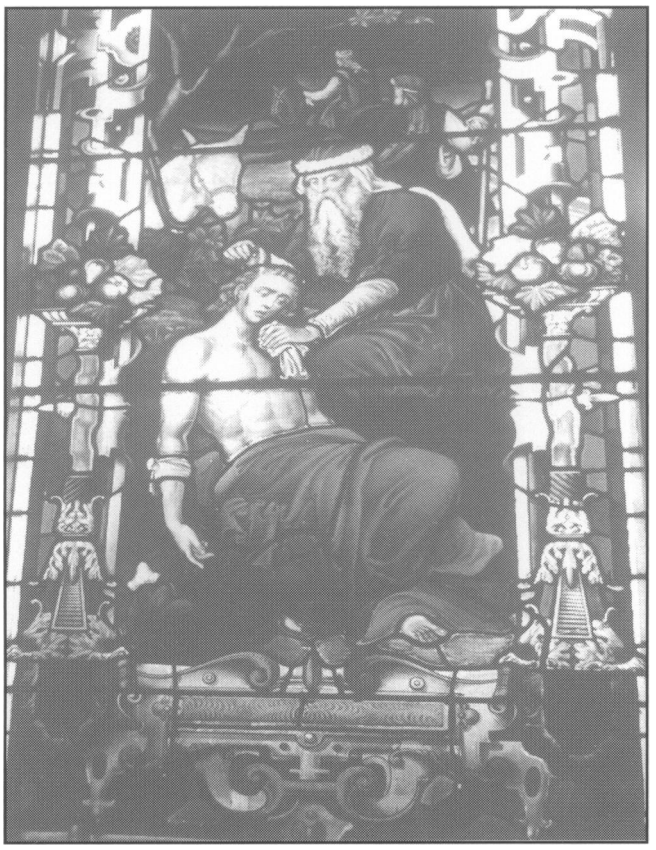

Fig 1. The Good Samaritan (detail).

You will know the story, but if you look on either side of the stained glass window in the centre you will see also the coats of arms of the several university establishments which have been responsible for the academic aspects of medical student training in Belfast since 1849. We will come back to that later. In some ways this window represents the two aspects of a teaching hospital that I want to talk about: the Good Samaritan representing the healer and health; the universities representing education.

My topics include a very brief view of the history of this hospital, and that of course will be dealt with in very much greater detail when the bicentenary takes place next year. I want to look at the politics of health and education. I want to discuss the people who work in the hospital, and the money that makes it tick. And finally I want to discuss your role as students in the hospital and indicate how important you all are in the actual metabolism of this institution.

It starts a long time ago. If you go to the top of Frederick Street in Belfast you will see an elegant building which was built in 1774 as both a poor house and an infirmary. Soon the need for dispensing medicines to the poor became clear, and in 1792 a general dispensary was opened in the basement, which provided a service rather like an outpatient department or a dispensing doctors practice for the sick poor.

Very soon after that a lying-in hospital for maternity cases was opened, but it was not until

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1797, because of the ongoing serious recurrent epidemics of fever in the rapidly growing town of Belfast that a general hospital was established. This was simply an obligation recognised by some of the doctors working in the town, that there was a need for a place where people sick of a fever could be isolated. So they rented a small house in a street called Factory Row, and this was the beginning of the present Royal Victoria Hospital. In 1797 it was called 'The Belfast Dispensary and Fever Hospital'.

The Belfast Charitable Society has sometimes been thought to be the first hospital in Belfast and in some ways it was. In the minute books for 1774 it is recorded that they provided seven beds for the sick, but they also had four double beds for sturdy beggars, 22 double beds for the poor, and four single beds for vagrants. It is probable that none of those beds was intended for people who were sick of fever. If you try to find Factory Row today you will not be successful, but by looking at the old maps and recognising that Royal Avenue was later built across some very small streets in the old part of Belfast, it is possible to find Berry Street which was the site of this first Belfast Fever Hospital was. It was somewhere in or around what is now Castle Court.

The hospital was moderately successful. It was certainly needed. There is very little known about it except what is recorded by Dr Andrew Malcolm in his early history, but it is clear that within two years it had to close. It had to close because there was not enough money to keep it going, because the people who came to it were not able to pay, and the citizens of Belfast did not subscribe sufficient money to support it. But whatever happened, within another two years, because of the ongoing epidemics of fever it was necessary to re-open the hospital – this time in three houses beside each other on the other side of Smithfield in West Street, at the back of the Castle Court car park. One of the few facts known about that hospital is that the average patient stayed for 40 days – much longer than they do now – at a cost of nine old pennies (4p) per day.

That Fever Hospital in West Street continued and must have been reasonably successful because by 1815 the citizens of Belfast recognised that they really did need a proper hospital, and subscribed and built a very fine building in Frederick Street just down the road from the Charitable Society. The foundation stone was laid in 1815 and the hospital was opened as The Belfast General Hospital in 1817. Unfortunately, the foundation stone, which was moved to this site when the hospital was ultimately vacated, has been lost. Inscribed upon it was *'Hoc nosocomium aegrotis et arti medicii sacrum . . .'* – 'This hospital to the sick and to the art of medicine is sacred'; at that early time it was recognised that the hospital had a function not only for looking after the sick but also for teaching the art of medicine.

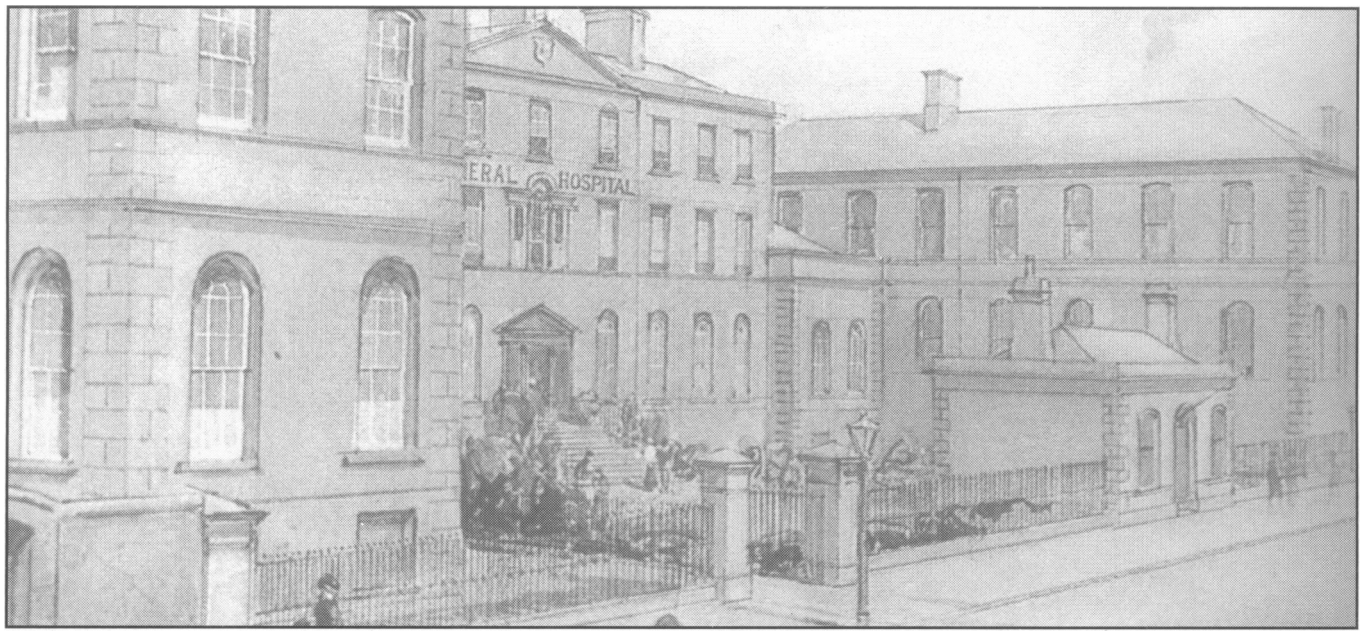

Fig 2. Painting of the Belfast General Hospital, Frederick Street, as it was about 1890. (Frank McKelvey, 1926: from the original in the Ulster Museum Collection, reproduced in 'The Seeds of Time', RS Allison.)

There is a very fine picture of the hospital in its heyday painted by the famous Belfast artist Frank McKelvey, which shows it as an elegant buff-coloured building (Fig. 2). It is unclear whether that was really what it looked like because McKelvey actually painted this picture 25 years after the hospital closed down; the only part of the painting now still visible is the little green door on the left which actually opened into the Friend's Meeting House which was always next door to the hospital. But you can see a fine three bay window above the front door and perhaps that was where the Good Samaritan really started. Frederick Street today is sad, and there is very little to see except for a carpark, but the Charitable Society is still there at the top end of the street.

The medical staff in the Belfast General Hospital were keen to encourage medical students and on 16th January 1820 they passed a resolution "that it was safe and proper to admit pupils to this hospital", the first registered pupil being a certain W Bingham who attended and walked the wards in 1821. Dr Bingham's career has been followed in small part and he subsequently became a family doctor in Donaghadee. There is no formal evidence of any actual teaching at the Belfast General Hospital until a lecture was held on 3rd June 1827 given by the most famous doctor in Belfast at the time, Dr James McDonnell. He was famous because he had been active in a number of intellectual organisations in Belfast, and was intimately involved in the Belfast Academical Institution which we now know as Inst. Dr James McDonnell was aged 65 at the time he gave the first lecture, and this oration today is the direct successor, 169 years later. It is not clear that a formal lecture was actually given every year, and the records suggest that exactly 100 years ago, in 1896, the lecture was not given. Dr James McDonnell is a name we all revere, and when you go today to the Board Room in the King Edward Building you will see his bust on the right-hand side of the door as you go in. That is a bronze copy of the fine marble original which is still in the Ulster Museum on the Stranmillis Road.

Now we turn to the politics of the situation and I refer to two men whom you may not know. One of them is our 'Minister of Health' (Mr Malcolm Moss, Member of Parliament for Cambridgeshire NE and Parliamentary Under-Secretary of State with responsibility for Health and Social Services in Northern Ireland – and also for the Environment), and the other is the 'Minister of Education' (Michael Ancram, Earl of Ancram in the Scottish peerage, Member of Parliament for Devizes, Minister of State in the Northern Ireland Office with responsibility for Education – and also Political Development, Sport, the Arts, and Community Relations). These two are presently responsible for the Government funding of health and education in this province. There is a division between health and education, not entirely confined to Government departments. There is a also a certain division between hospital and university. There is a division in whether you are considered as an apprentice or as a student; both of course are correct. We, in the teaching hospital, like to think of you in many ways as an apprentice, as you are when you attend the practice of the family doctor, although the academic approach to the medical student is rather different.

When Dr James McDonnell and his colleagues started the first medical school in Belfast at the Academical Institution in 1835 they were concerned about all of the proper academic arrangements for the teaching of medical students, which were not necessarily available within the Belfast General Hospital, some distance away in Frederick Street. The plan of the Belfast General Hospital clearly shows that there was a lecture theatre. As you went through the steps and up into the main floor of the building you found the house surgeon's room on the right of the hall and a second room for the house surgeon on the left, which conveniently opened into the housekeeper's room! But if you went down the corridor just beyond that you found a rather fine tiered lecture theatre just beside the rooms for the Belfast Medical Society. There were another two floors above where most of the patients were accommodated.

Lectures and demonstrations were obviously being given, and there is evidence in 1856 that lectures on clinical medicine would be delivered on Mondays and Thursdays, and on clinical surgery on Wednesdays and Saturdays, and that students paid a fee directly for these lectures. The first year four guineas, the second year three guineas, the third year two guineas, and if they were unfortunate enough to have failed their examinations after that the staff were generous enough to allow further attendance free. These payments were made to the medical staff, not to the hospital, and were certainly not payments to the University. That tradition continued for at least 100 years and many of the older members of

Fig 3. A class in the old surgical extern (now the Sir Ian Fraser Lecture Theatre) of the Royal Victoria Hospital, 1959. Professor Harold Rodgers, Professor of Surgery, in the front row.

staff in this audience will remember having their hospital certificates signed by the honorary secretary of the Medical Staff Committee. These certificates then had to be presented to the University to show that one had attended the clinical practice of the teaching hospital (Fig. 3).

Medical students have always been an essential part of the life of a hospital. Although first admitted to the Belfast General Hospital in 1820, it took a long time for them to be accepted in the other hospitals in this city. The Mater Infirmorum Hospital, which was formally opened in 1889, was not formally recognised for the attendance of medical students until 1909, and the Belfast Union Infirmary which had been built in 1857 was not actually recognised for the teaching of medical students until 1924. That was an extraordinarily long delay which was entirely due to the intransigence of the Poor Law Commissioners who ran that hospital. In 1884, Dr William Whitla at just about the same time as he was donating the Good Samaritan window to the Belfast General Hospital, did a survey of the numbers of beds in the different hospitals. The Belfast General Hospital had 180, the Mater Infirmorum, still small, had 14 beds, while the Union Hospital and Infirmary had 1,590 beds, but no medical students.

In 1902, at the time that the new hospital was being built on the Grosvenor Road, the staff recorded in the minute book that "while the Royal Victoria Hospital is an integral part of the Belfast Medical School, there is at present no definite official connection between the Hospital and the College. The staff are of the opinion that in the interests of the School it is desirable that a closer union should be established by the formation of a joint Board". Nearly 100 years after that minute there still is no joint board between the hospital and the University – a small committee which meets irregularly is no substitute.

A very famous teacher in this medical school and hospital was Professor Sir John Biggart. He is widely credited with the unusual arrangements that exist for employment of University staff within the hospitals in Northern Ireland. The concept of a 'joint appointment' was drawn up by the Northern Ireland Hospitals Authority and The Queen's University of Belfast in 1949 when the National Health Service was very new. They suggested that the arrangements being developed in Great Britain "were not regarded as the best possible procedure" – perhaps a sign of people in the North of Ireland wishing to be different for the sake of individualism. It has taken a long time to recognise that the arrangements for academic appointments in hospitals in other parts of the United Kingdom are quite sensible and that there are practical difficulties in our joint appointment system. Many people have looked at this problem and I hope that we will continue to do so. Professor, now Sir Peter Froggatt, just before he

became Vice-Chancellor of the University, got the balance right when he said that "medical education, like truth, is indivisible, that hospital and college must co-operate, that tact and unity of purpose and true partnership will triumph".

Forty years ago, the Belfast Medical Students Association was an active body. In 1959 we ran a very successful national clinical conference for medical students from all parts of Great Britain and Ireland. They came to Belfast in March of that year, the total cost inclusive of travel, regardless of where they came from, being £4.00 each. We raised some funds from the Government, including a dinner at Stormont, and from the hospital and from the pharmaceutical industry. It does seem extraordinary in retrospect that we were successful, and this was largely due to the enthusiastic support of the hospital staff. At least 100 students came from all parts, attracted by the even then rather cheap rate. I hope that you will also run a national clinical conference and the hospital will be very pleased to help (Fig. 4).

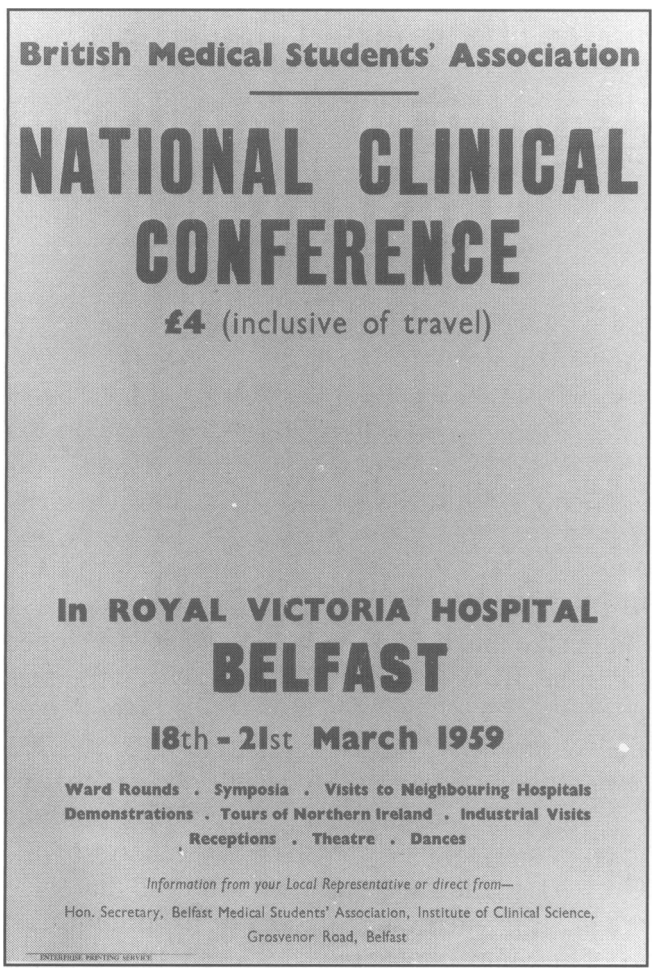

Fig 4. Poster advertising the National Clinical Conference at the Royal Victoria Hospital, 1959.

The next concept is of people in hospitals. The most significant doctor in the early days in this hospital was Andrew Malcolm, who unfortunately died young but had the good sense to have written a history of the hospital on which much of what we know is based. The Malcolm Exhibition, the prize for third year students, is named in his honour.

In 1850 it must have been difficult to get into the hospital as a patient. What was known as the 'board list' system existed, and the waiting list is still called a board list in this hospital. The present Chairman of the Trust Board might like to know what his predecessors' responsibilities were – it was necessary to have a little certificate stating that "We know the bearer and recommend them as a fit object to be admitted to the General Hospital and believe that they will be able to pay towards their support while there". This needed two signatures of subscribers of at least one guinea to the hospital. The certificate was then brought to the Board Room on a Tuesday and the Chairman of the Board had to sign "I have examined the above patient who is afflicted with (whatever disease) and consider it a fit case for admission. Admit the above for (so many) weeks". If the patient was acutely ill there was an over-riding method where the presenting doctor signed the bottom third of the form which said "I certify that this case is urgent, requiring immediate attention and will not admit a delay in order to come before the Committee on Tuesday next".

We have changed a lot since 1850. There are now 4,555 people working on this site. The great majority, 1,736, are nurses. This year we mourn

Fig 5. Miss Florence Elliott, Matron of the Royal Victoria Hospital, with two Assistant Matrons, Miss Earls and Miss Scott in 1966. (Reproduced in 'Yes Matron', reference 8).

the death of Miss Florence Elliott, a very famous Matron of this hospital (Fig. 5). Medical students of my vintage look back with some fear but certainly much affection to the concept of the Matron walking up and down the corridor and keeping us all very much in order. You certainly were on your best behaviour when Matron was going past. When Miss Elliott died recently in the fullness of years it was sad to me that there was no way we could formally recognise the loss of such a greatly respected member of the hospital community. There have been difficulties in hoisting flags on this building for a number of reasons but it would be perfectly in order to hoist a hospital flag. I would suggest to the medical staff and to the nursing staff that we should immediately institute a hospital flag, and what better than the Royal Victoria Hospital nurses' badge on a royal blue background, which could be displayed on a suitable flagpole within the campus of the hospital at times when the staff felt it appropriate (Fig. 6).

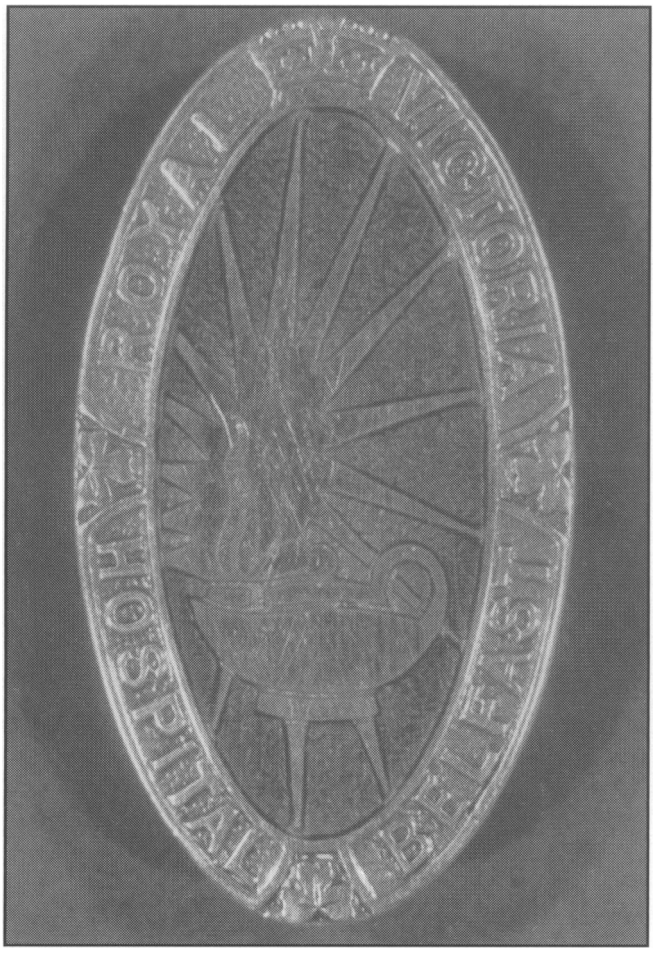

Fig 6. Suggested house flag for the Royal Victoria Hospital, based on the RVH nurses' badge; on a royal blue background.

If you go back to the Good Samaritan window and look underneath you will see a marble inscription which was also brought from the old hospital in Frederick Street. It states *"This memorial was erected by the late Mr Girdwood's numerous friends, who have deeply mourned his removal from their midst, to record their high estimation of him as a citizen and his sterling work as a friend. Also to testify their admiration of his indefatigable energy and his valuable services on behalf of this institution for a period of 18 years"*. I passed that plaque for many years and wondered who Mr Girdwood was, before I discovered that there was a bust of him just as you go into the Board Room in the King Edward Building. When you go for lunch today you will see him on the left-hand side of the door. Mr Girdwood was perhaps the most famous administrator of this hospital. No hospital can function without helpful administrators, and he was so much beloved that they subscribed to his bust which has survived since the move from Frederick Street. Mr Girdwood represents an important aspect of the metabolism of this hospital, the administrator.

The number of doctors who work in the hospital, as best I can count them, is 552. How many of those are actually members of the Medical Staff begins to create a problem. The staff lists of the Royal Victoria Hospital, the Royal Maternity Hospital and the Royal Belfast Hospital for Sick Children indicate that there are 215. The Directorates, which are the organizations run by the administration, consider there are 236, but when counted as whole-time equivalents only 159. Only 95 of these doctors actually work nine-tenths or more of their time in this hospital. There are at least 26 Queen's University joint appointments (counted as people). However, the personnel department of the hospital, who are responsible for the pay cheques, consider there are only 158. It is rather difficult to find who exactly is a member of the medical staff of this hospital, and a new statement of the regulations, which will take notice of new types of appointments such as an Associate Specialist and the Staff Grade, is much needed.

I have a hope for the years to come, when I look out of the window of the Metabolic Unit, down the hill beyond the Microbiology building, and I see in the distance a long way away the Belfast City Hospital – I hope that the distance between the Royal Victoria Hospital and the Belfast City

Fig 7. The Belfast City Hospital seen from the Royal Victoria Hospital.

Hospital gradually will become less (Fig. 7). There are a number of ways in which that can be achieved. One way is by our two medical staffs coming a little closer to each other. Another list, published in the Northern Ireland Medical Directory indicates that there are 214 consultants who consider that they are on the Royal Victoria Hospital staff, and 146 on the Belfast City Hospital staff. Jointly we are a group of 360 doctors, of whom about 10% (38) are actually on the staff of both hospitals. Maybe in the future, when you are old and grey, you will look back on this apparent division between two hospital staffs and wonder why it took them such a long time to come together. Eventually a union of the hospital staffs will be helpful in terms of looking after sick people in Belfast.

Now to the finances of the hospital. People are fond of saying that there is a crisis, but there is no crisis today anything like the crises there have been in the past. In 1799 the first hospital in Factory Row (Berry Street) closed altogether because there was no money to keep it going. In 1850 there was a major financial crisis in the hospital in Frederick Street. There was such a deficit that they had to close half of the beds in the hospital, and the outpatients department, and not only that but they reduced the house surgeon's pay. There was only one house surgeon who was paid £90 a year. The administrator of the day decided to reduce his pay from £90 a year to £10 a year. The administrator who did that was the same late Mr Girdwood who subsequently had the numerous friends, which shows that even a tough administrator can, at the end of the day, leave such a good impression that people subscribe to make a bust of him! There were other crises. In 1902 when they moved to the Grosvenor Road it was only just in time because the old hospital was simply not well enough equipped. In 1948 when the National Health Service was established it was only just in time as the voluntary basis of running the Royal Victoria Hospital was about to collapse.

In 1996 we are now a group of hospitals with 1,040 beds. Some of the staff may wonder whether that is really true, and we have to look very closely to see whether we believe the numbers of beds that are said to be still here. I have been able to compare some statistics from the hospital reports for 1954, 1976 and 1996 – the first date being when I was a third year student, and the second when I was secretary of the medical staff committee (Table). In 1954 there were 570 beds, in 1976 there were 796, and there are still almost the same number in 1996, even though a considerable number of beds have been closed down. Clearly other beds have been opened. The gross expenditure of the Royal Victoria Hospital in 1954 was £600,000, in 1976, £13m, and in 1996 £123m. There has been an enormous increase in costs, by over 200 times. This is not entirely due to inflation; the index of inflation used by the hospital services over the period of time from 1954-1996 works out at approximately four times between each of those three dates. The estimated 'real' cost in 1976 at 1954 values would have been a five times increase, and in 1996 approximately 12 times the 'real' cost in 1954. These figures represent the cost of looking after

TABLE

Royal Victoria Hospital

	1954	1976	1996
Beds	570	796	783
Outpatients (x 1,000)	391	375	344
Gross expenditure (£ million)	£0.6	£13.0 (x 21)	£123.0 (x 205)
Cost/patient/week (£)	£16.0	£342.0 (x 21)	£3,125.0 (x 195)
(at 1954 values)		£81.0 (x 5)	£195.0 (x 12)
Cost of food/patient/week (£)	£1.80	£6.04 (x 3.4)	£17.40 (x 9.6)
(at 1954 values)		£1.55 (x 0.8)	£1.09 (x 0.6)
Gross hospital costs			
Royal Group of Hospitals	£0.6	£13.0	£123.0
Northern Ireland (£ million)	£6.2	£83.0	£596.0
RGH %	10%	17%	20%
Senior medical staff	50	154	236
Bed/consultant ratio	1:10	1:4	1:3

Estimate of price inflation in 1976 and 1996 compared to 1954 obtained from the Health and Community Health Services Pay and Price Inflation Index, and the adjusted GDP deflator index.

a patient per week. Another statistic in the annual reports of the hospital is the cost of food per patient per week: this has gone up from £1.80 to £17.40 over the 40-year period. Applying the same inflation multipliers, there is actually a reduction in the 'real' cost of the food per patient per week of 40%. Food is now relatively cheaper, but it seems extraordinary that the proportionate amount spent by the hospital on food has reduced by so much in real terms. The gross costs of this group of hospitals, which are currently £123m per year, represent almost 20% of the gross hospital costs in the whole of the North of Ireland, which is a greater proportion than 40 years ago. The numbers of senior medical staff have increased greatly from 50 to perhaps 236, which means that the patient/consultant ratio has fallen from 1:10 to 1:3. The reason why the cost of health care in hospital has risen so much is a mixture of all these reasons, although we cannot blame the cost of food.

The hospital was funded in 1954 by direct grant through the Northern Ireland Hospitals Authority. Recently the concept of a market economy has been introduced in which money is paid by the Boards and the fund-holders in general practice in fulfilment of various contracts. In 1996 that was £102m. There is a further grant called STAR, or the Supplement for Teaching and Research, which is to compensate the Trust for the excess costs of undergraduate teaching and research, and that amount was £21m for last year. From the Department of Health there is an allocation of about £37,000 per student to pay for the additional costs in teaching hospitals of clinical teaching and research. The university at the same time receives a grant from the Department of Education of about £10,000 per clinical student which goes towards the university facilities and staff. If we want to do research in the future we may have to get separate funding from the research councils. Each medical student, as you sit in front of us today, is worth £47,000 to the conglomeration of hospital and university on this site: you are a very valuable commodity and that's why we're asking you to lunch afterwards!

But there still is not sufficiently good communication between the university and the hospital to discuss these matters at both high level and at staff level. When I asked at the

Department of Education for their view on these matters, they identified the 'ten key principles' that had been agreed by the Committee of Vice-Chancellors and Principals throughout the UK in 1990. These include the concept of educating our medical students in the spirit of enquiry and research, of efficiency and cost-effectiveness, that both parties – the hospital and the university – should agree locally, and should involve the senior staff of each. We should share information, research implications for teaching and service should be honoured, and both parties should consult on appointments. STAR, or the other similar funds in other parts of the UK, should be jointly agreed. These ten key principles are still important, and we should look at them jointly with our colleagues in the universities.

Fig 8. The blackstone wall of the grounds of the old Belfast Lunatic Asylum.

As you go across the road after this lecture and have your cup of coffee, look at the wall that you cross over on the bridge to the Mulhouse building (Fig. 8). That old black wall was the boundary wall of the old Belfast lunatic asylum, and used to surround the whole site. It was a fine building, but was eventually pulled down in 1926 and all of the patients transferred to the new buildings in Purdysburn. An old map at that time shows both the Royal Victoria Hospital, then relatively new, and the old asylum just behind it, more or less where the maternity hospital is now. There were a number of trees growing in the grounds, some of them in a row. The new Royal Victoria Hospital was a considerable architectural innovation because of its central heating and air conditioning system, and it is considered to be the first air conditioned building in the world. The air came into the wards not through windows but through ducts in the walls and was extracted and brought out through further ducts at the very end of each ward. Underneath the main corridor there was a long, long ventilation duct, along which cleaned and moistened air was blown by an enormous fan. This part of the hospital has been designated as a site of architectural importance and listed as a building which must be preserved.

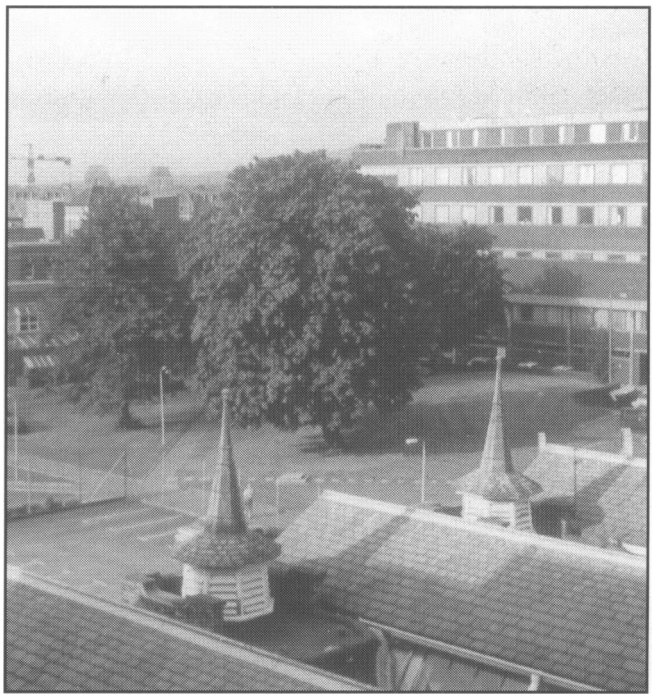

Fig 9. The central lawns of the Royal Victoria Hospital in 1996, showing the chestnut tree and the ventilation 'pagodas' at the ends of each ward.

If you had looked out of my office window in the Metabolic Unit in 1957 you would have seen that same row of trees, and if you look out now 40 years later, although there are not so many trees, one of them has grown considerably. The famous RVH chestnut tree attracts small boys from all over Belfast who come to throw sticks to get the 'conkers' (Fig. 9). If you want to know the age of a tree, you stand and put your arms around it at a height of 5 feet. The girth of a tree at a height of 5 feet, in inches, is approximately equal to the age of the tree in years. On this basis the chestnut tree is now 127 years old, which means that it was there long before the RVH was there and was planted sometime about 1870, in the grounds of the lunatic asylum.

If you look out of the window in the Metabolic Unit in another five years' time (if it's still there) you will see a new building. It is a tribute to the architects Ferguson & McIlveen of Belfast and their colleagues Percy Thomas of London that they have incorporated in the new building a new corridor which, hopefully, will preserve the metabolism of the hospital so that we will continue to be able to work together in close harmony, both in looking after patients and in teaching students. This corridor will also require a suitable stained glass window at one end, and I suggest that the medical staff committee should consider presenting one.

There are other new buildings which have gone up on this site, particularly the recently renovated laboratories (the old Kelvin and previously Grosvenor High School), and the work going on at present at the Royal Belfast Hospital for Sick Children which will be finished in two years. But when we look back to remember the old wards of the Royal, what we will really remember will be those curious pagodas that sit at the end of each ward, which are the exhausts for the air conditioning system. Perhaps some of them will be preserved for posterity.

One certain way to concern all of us in what is happening in the metabolism of this hospital today is to talk about car parking. A picture of the car park at the Royal Victoria Hospital in 1950 shows that not only the very fine fleet of Daimler ambulances but also all of the senior medical staff motor cars shared the small area just outside what is now the kitchen of the hospital, but had been built as the original casualty department (Fig. 10). If you came into the casualty department before 1940 there was a very fine waiting hall which has now been subdivided. At the end of that hall was the Good Samaritan window. It was finally moved to the end of the main corridor about 1944. You can only see it well in the morning when the sun is shining through it. I hope you will not consider it inappropriate to study the window carefully. The Good Samaritan didn't have to ask whether he had a contract to attend to the man who fell among thieves, or whether he was funded by the Department of Health or the Department of Education: like a good Belfast medical student he was well prepared and he got on with the art of medicine. I wish each of you every success in all of your future healing and educational endeavours.

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Fig 10. The staff car park outside the casualty department in 1950.

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